Fermi National Accelerator Laboratory
Batavia, IL 60510

CMS ME3/1 ANODE PANEL WIRE SOLDERING TRAVELER

Reference Drawing(s)

Endcap Muon Chamber ME3/1 Final Assembly
5520-ME-368310

Endcap Muon Chamber ME3/1 Anode Panel Assy
5520-ME-368311

Budget Code:	**Project Code:**
Released by:	**Date:**
Prepared by: M. Hubbard, B. Jensen, L. Lee	

Title	Signature	Date
TD / E&F Process Engineering	**Bob Jensen/Designee**	
TD / E&F CMS Assembly	**Glenn Smith/Designee**	
TD / E&F Technological Physicist	**Oleg Prokofiev/Designee**	
TD / CMS Project Manager	**Giorgio Apollinari/Designee**	

Revision Page

Revision	Step No.	Revision Description	TRR No.	Date
None	N/A	Initial Release	N/A	04/26/00

Ensure appropriate memos and specific instructions are placed with the traveler before issuing the sub traveler binder to production.

1.0 General Notes

1.1 White (Lint Free) Gloves (Fermi stock 2250-1800) or Nitrile Gloves (Fermi stock 2250-2040) shall be worn by all personnel when handling all product parts after the parts have been prepared/cleaned.

1.2 All steps that require a sign-off shall include the Technician/Inspectors first initial and full last name.

1.3 No erasures or white out will be permitted to any documentation. All incorrectly entered data shall be corrected by placing a single line through the error, initial and date the error before adding the correct data.

1.4 All Discrepancy Reports issued shall be recorded in the left margin next to the applicable step.

1.5 All personnel performing steps in this traveler must have documented training for this traveler and associated operating procedures.

1.6 Personnel shall perform all tasks in accordance with current applicable ES&H guidelines and those specified within the step.

1.7 Cover the panel/chamber with Mylar when not being serviced or assembled.

1.8 Never hand/ pass anything over a panel as dropped items may damage the panel.

2.0 Parts Kit List

2.1 Attach the completed Parts Kit List for the CMS Anode Panel Wire Soldering to this traveler. Ensure that the serial number on the Parts Kit List matches the serial number of this traveler. Verify that the Parts Kit received is complete.

_____ _____

Process Engineering/Designee Date

3.0 Panel Preparation

Completed

X 3.1 Acquire the appropriate Anode Panel as per serial number on the bottom of this traveler. Visually inspect the Anode Panel to ensure that all wires are intact and there are no damaged wires. Ensure the wires have been glued to the Fixation Bars and a mylar cover strip is in place.

_____ _____

Lead Person Date

3.2 Transport the completed Anode Panel using the panel transport cart to the soldering table ❒

3.3 Rotate the panel to horizontal with the serial number side facing UP and place on the table. ❒

_____ _____

Technician(s) Date

4.0 Wire Soldering

Completed

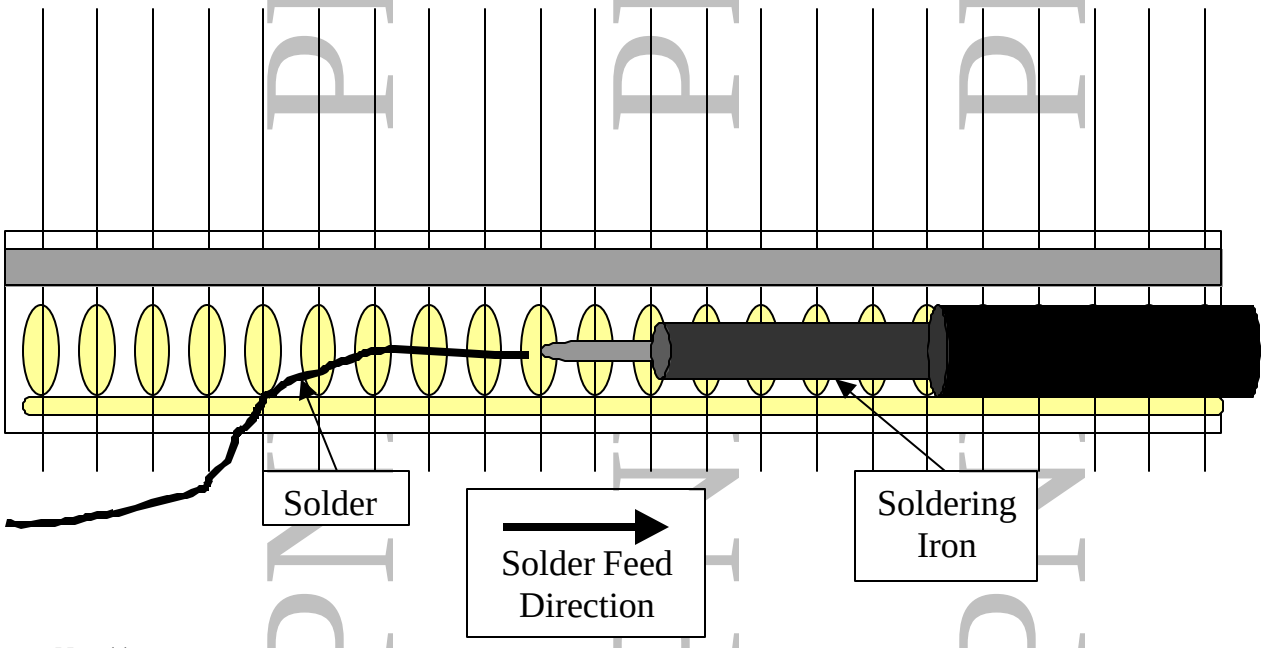
4.1 Starting at the narrow end, begin to solder the wires to the soldering pads on the Fixation bars using Almit Solder (MA-368291) and a hand soldering iron set at 700 °F. ❒

Note(s):

Ensure all wires are making contact with the pad before soldering

4.2 Contact the pad with the iron for no more than three seconds while applying the solder. ❒

4.3 Feed solder onto the pad in accordance with the drawing below so as to prevent any solder from "splashing" out onto the wires. ❒



Note(s):

Ensure the solder is shiny and smooth to the touch and is NOT touching any other soldering pad, solder or wire.

4.3 Solder down the entire side, and follow the same procedure down the opposite side of the panel ❒

4.4 Rotate the panel 180° so the Non-serial number side faces up. ❒

4.5 Solder the wires on both sides of the panel accordingly. ❒

4.6 Identify any skips, burns and/or improper soldering that may have been caused during soldering. ❒

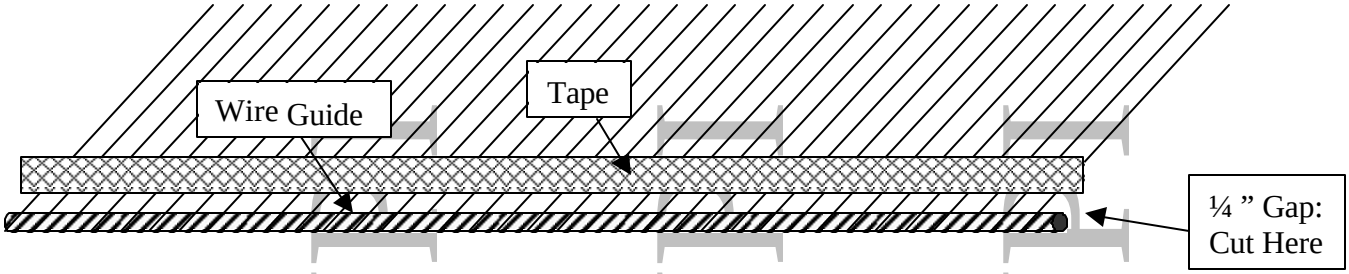
4.7 Physically inspect the pads to be sure that all the wires are on the soldering pads correctly. ❒

_____ _____

Technician(s) Date

5.0 Wire Taping/Cutting

Completed



5.1 Install the panel in the vertical position on the transport cart. Install masking tape, 1" wide (Fermi Stk No.1365-0940), the length of the panel onto the wires as shown in above diagram to both the Serial and Non-serial number sides, top and bottom. (All four sides to be taped) Tape the wires just inside the Wire Guides to keep the wires intact, so when the wires are cut they do not make a mess. ❒

Note(s):

Extreme care is to be used during the installation of the masking tape to prevent damage to the wires.

5.2 Use scissors to cut the wires along both Wire Guides the length of the panel on the Serial Number side in between the Wire Guides and the tape. ❒

Note(s):

Extreme care is to be used to ensure the correct cutting of the wires.
Ensure the cutting is between the tape and the Wire Winding Guide Bars.

_____ _____

Technician(s) Date

6.0 Production Complete

XXX 6.1 Process Engineering verify that the CMS ME3/1 Anode Wire Soldering Traveler (5520-TR-333462)is accurate and complete. This shall include a review of all steps to ensure that all operations have been completed and signed off. Ensure that all Discrepancy Reports, Nonconformance Reports, Repair/Rework Forms, Deviation Index and dispositions have been reviewed by the Responsible Authority for conformance before being approved.

Comments:

_____ _____

Process Engineering/Designee Date

7.0 Attach the Process Engineering "OK to Proceed" Tag on the magnet.

_____ _____

Process Engineering/Designee Date

8.0 Proceed to the next major assembly operation as required.